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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,741	07/18/2000	Thomas M. Hartnett	07206-118001	8640
51503	7590	12/08/2006	EXAMINER	
RAYTHEON COMPANY c/o DALY, CROWLEY, MOFFORD & DURKEE, LLP 354A TURNPIKE STREET SUITE 301A CANTON, MA 02021-2714			HOFFMANN, JOHN M	
			ART UNIT	PAPER NUMBER
			1731	
DATE MAILED: 12/08/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/618,741	HARTNETT ET AL.	
	Examiner	Art Unit	
	John Hoffmann	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12 October 2006.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 8,10-13 and 32-83 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 8,10-13 and 32-83 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/06 has been entered.

Claim Objections

Claims 8, 10-13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

For example, claim 8 depends from claim 32. Claim 32 is not a previous claim; it is a subsequent claim.

Claims 58, 60, 76 are objected to because of the following informalities: indents are needed.

From MPEP 608.01 Form of Claims

Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR 1.75(i).

There may be plural indentations to further segregate subcombinations or related steps.

Appropriate correction is required.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no mention of any "subjecting" step in the specification. Claim 32 has a step of subjecting.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 10-11, 13 and 32-83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32: line 16, there is no antecedent basis for "the entire conversion". It is unclear what is meant by "subjecting" the particles to a temperature. It is unclear if it means they are actually heated to the temperature, or if it means the particles are in a chamber which has at least a portion of a wall at the temperature, or what. There is no mention of any subjecting step in the specification which would help in determining what is meant by the claim.

From MPEP 2111.01

(Ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in

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a particular context changes their meaning, are construed to mean exactly what they say. Thus, "heating the resulting batter-coated dough to a temperature in the range of about 400oF to 850oF" required heating the dough, rather than the air inside an oven, to the specified temperature.)

Thus it is clear that what structure/material/gas has the specified temperature – is a germane question. A look to the specification indicates that the it is the chamber that is heated – presumably at least a portion of a chamber wall. Examiner finds it impossible to determine whether the present claims are suppose to be limited to what is disclosed in the present specification.

This applies to all the claimed steps that refer to temperature. It is impossible to tell what is at the temperature.

Various claims have confusing antecedent basis for "temperature" see for example claim 53 refers to "said the temperature". All of the claims must be corrected to provide proper antecedent basis.

Claims 33, 35, 37, 40, 42, 45-46, 48, 51-52, indicates that "the temperature" is 1700-1900 C. It is not understood if it means it is one temperature within the range, if it all temperatures within the range (i.e. all temperatures must be present), or that the temperature can vary within the range or what. This also carries back to all other claims that refer to a temperature – as to whether the temperature really is just a single temperature. Claim 38 has substantially the same problem.

Claim 36, line 14: it is clear that "to at" should be either "to" or "at" – but it is unclear which.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8, 10-11, 13 and 32-83 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. 11

Claim 32 requires subjecting the mixing particles to a temperature...during the 17 entire conversion. Examiner could find no support for this limitation. Moreover, one of ordinary skill would reasonably expect that there is no support for this limitation, because one would expect more than one temperature. For example if the furnace temperature is 1800 C, one would expect that at least some conversion would occur prior to its reaching "the temperature" – for example at 1750 C. Thus the subjecting would occur during less than the entire conversion – some would have been converted prior to the temperature. This applies to the other claims that refer to the entire conversion. Additionally, as indicated above, there is no support for any sort of "subjecting" step.

Claim 58: there is no support for step (b) as presently claimed. There is no support for step c of claim 60. There is no support for the invention of claim 68. There is no support for step b of claim 76.

Double Patenting

Applicant is advised that should claim 33 be found allowable, claim 38 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8, 10-11, 13 and 32-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maguire 4686070 in view of Serpek 1030929 and optionally in view of Feeco.com's webpage on Rotary Kilns.

See how the reference were applied in prior Office actions. Applicant has not provided any arguments regarding this combination of references, thus it is deemed that Applicant agrees that it is appropriate.

Feeco's reference can be applied because it discloses that using a rotary kiln (not unlike Applicant's fig 5-6) indicates that rotary furnaces have been the preferred means for heat treating solids for over 100 years – and it reduces processing time from

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an hour to a few minutes. It is not invention to apply a 100 year old preferred technique to a known process.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maguire in view of Serpek and optionally in view of Feeco.com's webpage on Rotary Kilns as applied to claim 11 above, and further in view of Abstract of JP403023269A or Dodds 5925584.

See how these references were applied in the previous rejections – for example that of April 6, 2003. Applicant has not provided any arguments regarding this combination of references, thus it is deemed that Applicant agrees that it is appropriate.

Claims 8, 10-11, 13 and 32-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art Admission (hereinafter 'APAA') in the paragraph spanning pages 1-2 of the specification, alone or in view of Serpek 1030929 and optionally in view of Feeco.com's webpage on Rotary Kilns.

See how the reference were applied in prior Office actions. Applicant has not provided any arguments regarding this combination of references, thus it is deemed that Applicant agrees that it is appropriate.

Feeco's reference can be applied because it discloses that using a rotary kiln (not unlike Applicant's fig 5-6) indicates that rotary furnaces have been the preferred

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means for heat treating solids for over 100 years – and it reduces processing time from an hour to a few minutes. It is not invention to apply a 100 year old preferred technique to a known process.

Response to Arguments

Applicant's arguments filed 12 October 2006 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In other words applicant's arguments are directed to only the primary references of each rejection. None of the arguments point to any error in the combination of references.

Applicant argues that Applicant discovered that they discovered one can produce AION more rapidly. This discovery is well known. See for example the Feeco.com reference which indicates that rotary furnaces have been the preferred means for heat treating solids for over 100 years – and it reduces processing time from an hour to a few minutes.

Regarding the objection, it is argued that the claims do not set forth a plurality of steps. The claims clearly has steps – for example see the preamble of claim 60 which states that the process "comprising the steps of". It is also argued that the indents is

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merely a suggestion. Absent a reason to not provide indents, the objection is maintained. Examiner has the authority to require compliance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann
Primary Examiner
Art Unit 1731

11-27-06

jmh